

# HISTORIC PROPERTY INVENTORY FORM

## IDENTIFICATION SECTION

Field Site No. 116-N OAHF No. \_\_\_\_\_ Date Recorded 10-Feb-95  
Site Name Historic Ventilation Stack Structure - Reactor  
Common \_\_\_\_\_  
Field Recorder Kristine M. Bowen, Evaluator: Darby Stapp  
Owner's Name U.S. Department of Energy, Richland Operations Office  
Address P.O. Box 550  
City/State/Zip Code Richland, WA 99352

### Status

- ☒ Survey/Inventory  
☐ National Register  
☐ State Register  
☐ Determined Eligible  
☐ Determined Not Eligible  
☐ Other (HABS, HAER, NHL)  
☐ Local Designation

### Photography

Photography Neg. No. 94010864-4cn  
(Roll No. & Frame No.)  
View of Looking Northwest  
Date January 1994

Classification ☐ District ☐ Site ☐ Building ☒ Structure ☐ Object  
District Status ☒ NR ☐ SR ☐ LR ☐ INV  
Contributing ☒ Non-Contributing ☐  
District/Thematic Nomination Narrative Hanford Site Manhattan Project and Cold War Era Historic District

## Description Section

### Materials & Features/Structural Types

Building Type Industrial  
Plan Round Chimney  
Structural System Reinforced Concrete  
No. of Stories N/A

### Roof Type

☐ Gable ☐ Hip  
☐ Flat ☐ Pyramidal  
☐ Monitor ☒ Other (specify) \_\_\_\_\_  
☐ Gambrel N/A - No Roof  
☐ Shed

### Cladding (exterior Wall Surfaces)

- ☐ Log  
☐ Horizontal Wood Siding  
Rustic/Drop ☐  
Clapboard ☐  
☐ Wood Shingle  
☐ Board and Batten  
☐ Vertical Board  
☐ Asbestos/Asphalt  
☐ Brick  
☐ Stone  
☐ Stucco  
☐ Terra Cotta  
☒ Concrete/Concrete Block  
☐ Vinyl/Aluminum Siding  
☐ Metal (specify) \_\_\_\_\_  
☐ Other (specify) \_\_\_\_\_

### Roof Material

☐ Wood Shingle  
☐ Wood Shake  
☐ Composition  
☐ Slate  
☐ Tar/Built-up  
☐ Tile  
☐ Metal (specify) \_\_\_\_\_  
☒ Other (specify) N/A  
☐ Not visible

### Foundation

☐ Log ☐ Concrete  
☐ Post & Pier ☐ Block  
☐ Stone ☒ Poured  
☐ Brick ☐ Other (specify) \_\_\_\_\_  
☐ Not visible

### Integrity

(Include detailed description in

### Description of Physical Appearance)

	Intact	Slight	Moderate	Extensive
Changes to plan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Changes to windows	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Changes to original cladding	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Changes to interior	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (specify) _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

State of Washington, Department of Community Development  
Office of Archaeology and Historic Preservation  
111 21st Avenue Southwest, Post Office Box 48343  
Olympia, Washington 98504-8343 (206)753-4011

## LOCATION SECTION

Address 100-N Reactor Area, Structure 116-N  
City/Town/County/Zip Code Richland, WA/Benton County/99352  
Twp. 14N Range 26E Section 28 1/4 Section NE 1/4 1/4 Sec NW  
Tax No./Parcel No. \_\_\_\_\_ Acreage \_\_\_\_\_  
Quadrangle or map name Coyote Rapids 7.5 min. series  
UTM References Zone 11 Easting 303974 Northing 5172485  
Plat/Block/Lot \_\_\_\_\_  
Supplemental Map(s) 100-N Area Buildings



### High Styles/Forms (Check one or more of the following)

<input type="checkbox"/> Greek Revival	<input type="checkbox"/> Spanish Colonial Revival/Mediterranean
<input type="checkbox"/> Gothic Revival	<input type="checkbox"/> Tudor Revival
<input type="checkbox"/> Italianate	<input type="checkbox"/> Craftsman/Arts & Crafts
<input type="checkbox"/> Second Empire	<input type="checkbox"/> Bungalow
<input type="checkbox"/> Romanesque Revival	<input type="checkbox"/> Prairie Style
<input type="checkbox"/> Stick Style	<input type="checkbox"/> Art Deco/Art Moderne
<input type="checkbox"/> Queen Anne	<input type="checkbox"/> Rustic Style
<input type="checkbox"/> Shingle Style	<input type="checkbox"/> International Style
<input type="checkbox"/> Colonial Revival	<input type="checkbox"/> Northwest Style
<input type="checkbox"/> Beaux Arts/Neoclassical	<input type="checkbox"/> Commercial Vernacular
<input type="checkbox"/> Chicago/Commercial Style	<input type="checkbox"/> Residential Vernacular (see below)
<input type="checkbox"/> American Foursquare	<input checked="" type="checkbox"/> Other (specify) _____
<input type="checkbox"/> Mission Revival	<input type="checkbox"/> Industrial Vernacular

### Vernacular House Types

<input type="checkbox"/> Gable Front	<input type="checkbox"/> Cross Gable
<input type="checkbox"/> Gable Front and Wing	<input type="checkbox"/> Pyramidal/Hipped
<input type="checkbox"/> Side Gable	<input type="checkbox"/> Other (specify) _____

## NARRATIVE SECTION

### Study Unit Themes (check one or more of the following)

- ☐ Agriculture
- ☐ Architecture/Landscape Architecture
- ☐ Arts
- ☐ Commerce
- ☐ Communications
- ☐ Community Planning/Development

- ☐ Conservation
- ☐ Education
- ☐ Entertainment/Recreation
- ☐ Ethnic Heritage (specify) \_\_\_\_\_
- ☐ Health/Medicine
- ☐ Manufacturing/Industry
- ☐ Military

- ☐ Politics/Government/Law
- ☐ Religion
- ☐ Science & Engineering
- ☐ Social Movements/Organizations
- ☐ Transportation
- ☒ Other (specify) Manhattan Project & Cold War Era
- ☒ **Study Unit Sub-Theme(s) (specify)**  
Cold War/Nuclear Fuel Production  
Waste Management (Air)

### Statement of Significance

Date of Construction 1964 Architect/Engineer/Builder General Electric

- ☒ In the opinion of the surveyor, this property appears to meet the criteria of the National Register of Historic Places.
- ☒ In the opinion of the surveyor, this property is located in a potential historic district (National and/or local).

The 116-N Ventilation Stack was constructed in 1964 and served an essential function in the 105-N ventilation system, designed to prevent the spread of radioactive contamination. 105-N had five ventilation zones, also known as confinement zones, each served by supply and exhaust fan units, and plenums connected to duct work containing dampers and supply grilles. Air exhausted from Zone 1 (primary radiation area), Zone 2 (secondary radiation area), and Zone 3 (normal access areas; metal preparation storage basin, and transfer area) was routed through a high-efficiency particulate air filter system located in the 117-N Filter Building and then discharged to the atmosphere from the 116-N Ventilation Stack. Zones 4 (unlimited access areas and maintenance shop area) and Zone 5 (warranted access area) were exhausted directly to the atmosphere.

This property is not associated with an important person (Criterion B), does not possess any distinctive architectural features or methods of construction (Criterion C), and does not qualify under Criterion D as the principal source of important information. However, the 116-N Ventilation Stack qualifies under Criterion A due to its association with the Cold War production of plutonium at N Reactor, and its contribution to Reactor Operations, specifically the Reactor Ventilation System. Therefore, it is the conclusion of the U.S. Department of Energy that the 116-N Ventilation Stack is eligible under Criterion A for inclusion on the National Register of Historic Places as a contributing property within the Hanford Site Manhattan Project and Cold War Era Historic District.

### Description of Physical Appearance

116-N is a circular concrete ventilation stack set into a steel-reinforced concrete octagonal base that is 33 ft 6 in. (10 m) wide. At its base the inside diameter of the stack is 21 ft 6.5 in. (6 m) and the outside diameter is 23 ft 6.5 in. (7 m). The top of the stack is 201 ft (61 m) above grade and 223 ft (68 m) above the base which is mostly, if not entirely, below grade. The inside diameter at the top is 14 ft (4 m) and the outside diameter is 15 ft (5 m). The top is encircled with a cast iron cap. This structure has undergone no significant changes.

The N Reactor UTM coordinates are as follows: Northeast corner - 303974E, 5172485N; southeast corner - 303974E, 5171639N; southwest corner - 303069E, 5171639N; northwest corner - 303069E, 5172485N.

### Major Bibliographic References

Westinghouse Hanford Company. 1988. *N Reactor Updated Safety Analysis Report*. WHC-SP-0297, Volume 6, Section 11.3.2.

SAR 3.8-18 & 3.8-27 181N Plan & Elevation & 116N Stack, Drawing No. H-1-39795, 1978.